

## PULMONARY CONSULT NOTE

**Reason for consult:** Lung nodules and cysts.

### HPI:

48 yo male presents with L shoulder pain, progressively worsening since 1/09. He notes that he has been more fatigued for about 18 months with some episodes of URI like symptoms (more than he noticed in the past). In late December 2008 he had what he thought was a PNA: green sputum, chills (no fever), mild SOB. Also at this time he experienced acute onset of aching left shoulder pain (in the absence of trauma or other precipitating factors.) He was evaluated at a local ED and told he had PNA but also a "spot o" on his scapula. The PNA symptoms improved however the fatigue improved. Ended up having a bone scan which revealed a second lesion in his right hip. 3/12 had L scapula excisional biopsy, which showed necrotizing granulomas most consistent with an acute and chronic osteomyelitis with histiocytic infiltration with a propensity towards granuloma formation. Pt was d/c without antibiotics and to f/u as necessary. Several days after d/c, his shoulder pain worsened and he went to see Dr. [REDACTED]. A scapula Xray on 3/17 was done, which reported a lytic lesion affecting left scapular spine with associated fracture. Final path from the biopsy was reported on 3/17, which shows necrotizing granulomas with extensive polymorphonuclear cell infiltration. Special stains for organisms were negative. The pathology is not consistent with sarcoid and is most consistent with an acute and chronic osteomyelitis with histiocytic infiltration with a propensity towards granuloma formation. Of note, Gram stain mycobacterial and fungal stains were all negative. In microbiology (and corresponding stains were negative in pathology) and routine culture, aerobic and anaerobic, fungal cultures and mycobacterial cultures are negative for no growth to date. There are two bone lesions, 1 in the left scapular and 1 in the right femur, are not clear. They have periosteal bone reaction. Of note, Mr. [REDACTED] reports no fevers. He has a normal white count. He is not anemic. He has a normal globulin. His platelet count is normal and not elevated. He feels well except for shoulder pain and to physical examination no other abnormalities are noted (and overall sense of fatigue and depression with occasional chills). A chest pet cat CT scan was performed at an outside hospital. Although we do not have the original films, that PET scan was only notable for the 2 lesions (right femur and left scapula) and although there was some mention of mediastinal lymphadenopathy, review of the original report from the outside hospital disclosed no lymph nodes in the mediastinum greater than 1 cm in size.

Pt admitted on 3/21. He was reporting worsening malaise, sweats and anxiety and further evaluation of his underlying condition. Denies CP/SOB/cough/rhinorrhea. Denies N/V/D. He has been afebrile throughout this admission. R femur lesion continues to be asymptomatic. During this admission, pt has received a CT chest/abdo/pelvis, reporting nodules in a random distribution most <2mm, all <4mm and small cystic lucencies throughout both lung fields. Lymph nodes in bilat axilla (largest in R at 1.2cm) and abdo (largest L at 1.7cm). A thyroid 1.2 cm nodule was also commented upon.

**ROS:** As per HPI. Otherwise negative in detail.

### PMH:

Bipolar-affective d/o  
Appendectomy 1985  
Borderline HTN  
Remote hx of ? GI bleed

**Allergies:** Tetracycline - nausea

### Notable Current Medications

Anbx: vancomycin 1 gm q12, doxycycline 100 mg PO q12

Lamictal, Lithium, Dilaudid, Omeprazole, Colace, Nicotine patch

**Family History:**

Mom- Paget's disease

Dad- Paget's disease, died with colon ca with lung mets at age 68

Older bro- DM, no other sibs

No known history of alpha-1 antitrypsin in family.

**Social History:** Occupation: Lawyer. Lives with and cares for his mother. Divorced.

Habits: Smoker 1.5packs/day for past 3 yrs, ½ PPD for 2 yrs prior to that and cigars previously. Denies alcohol or recreational drug use.

Travel: Ascencion Paraguay 1993, Moscow Russia 1999 [REDACTED]

Pets: None. No rodent/farm/animal exposure recently. Mold in his law office.

**Physical Exam:**

Vitals: Afeb, 78(reg0/min 133/65 mmHg, 98% RA 12-16/min

Gen: NAD, breathing comfortably

HEENT/neck: JVP flat, poor oral dentition with two carries in the posterior upper molars, no painful. NO cerv/supraclav adenop

Lungs/chest: CTA B/I No WRR, no pain to percussion

Heart: RRR no MRG

Abd: S, NT, + heptaomeg

Extr: No C/E/E no evidence of Osler or Janeways, no rashes and no joint effusion

**Lab:**

WBC 16.9 Hgb 15.4 Hct 42.4 PLT 299

ESR 8

UA clear, no RBC/WBC

HIV neg

143/4.1/105/27.9/10/0.98 Gluc 86

LFTs normal Urinalysis Ket 1+ Prot Trace

IgG, IgA normal

IgM 49 (N 53-334)

Urine Bence-Jones protein, SPEP normal

CRP 19

ACE 18

**Microbiology**

Site	Date	Growth
Blood		
BAL		
Sputum	3/22, 3/23	Neg AFB to date
Pleural Fluid		
Viral swab	3/22	neg

Date Culture Source Organism Susceptibilities

3/11/09 L scapula excision No growth, rare polys, few monocyte, ANCA negative, warthin- starry neg

3/21-22 BCx No growth

3/21-23 Sputum No growth, Resp panel negative

Pending serology: RPR, Cryptococcal Ag, Meliodosis, Fungal serology, quantiferon TB gold, HIV ELISA

Negative serology: Q fever Phase I and II IgG and IgM, B henselae Ab, B Quintana Ab, Urine histoplasma Ag

L scapula excision 3/12: ACUTE OSTEOMYELITIS WITH NECROSIS AND

## GRANULOMAS

TTE:NA

PFTS: March 2009

FEV1 L 3.71 4.01 93 3.17 4.85 N 3.73 93 1  
FVC L 4.56 5.00 91 3.88 6.12 N 4.58 92 0  
FEV1 / FVC % 81 80 101 72 ---- N 81 101 0  
FEF@% L/s 3.79 3.94 96 2.27 5.61 ---- ----  
PEFR L/s 8.35 9.06 92 5.17 12.95 8.26 91 -1  
FIVC L 4.40 5.00 88 3.88 6.12 3.93 79 -11  
Actual Predicted % Pred Actual % Pred % Change

### Plethysmography

CI Range

ATS Pre Bronchodilator Post Bronchodilator

TLC L 5.50 7.00 79 5.39 8.61 N ---- ---- --  
FRC L 3.62 3.54 102 2.08 5.00 N ---- ---- --  
ERV L 2.68 1.54 174 ---- ---- ---- --  
RV L 0.94 2.00 47 1.24 2.76 A m ---- ---- --  
RV/TLC % 17 29 59 18 40 A ---- ---- --  
VC L 4.56 5.00 91 3.88 6.12 ---- ---- --

Resistance

Raw cmH2O/L/s 2.13 < = 2.80 ---- ---- N ---- --  
sGaw L/s/cmH2O 0.15 > = 0.12 ---- ---- N ---- --  
Actual Predicted % Pred Actual % Pred % Change

### Diffusion

CI Range

ATS Pre Bronchodilator Post Bronchodilator

DLCO mL/min/mmHg 21.38 31.22 68 23.23 39.21 ---- ---- --  
DLCO [Hb] mL/min/mmHg 21.15 31.22 68 23.23 39.21 A m ---- ---- --  
Hb g/dl 15.0 14.6 ---- 12.0 16.0 ---- ---- --

## Imaging:

CT chest 3/21/09 Lungs: There are randomly distributed nodules throughout the lungs, most less than 2 mm the largest measuring 4 mm. Small cystic lucencies are also seen throughout the lung.

Pleura: The pleural spaces are clear.

Heart and mediastinum: There is a 1.2-cm thyroid nodule in an enlarged left thyroid lobe. There are numerous subcentimeter lymph nodes seen in the prevascular, pretracheal right and left paratracheal and subcarinal space. No pericardial effusion.

HEPATOBIILIARY: Small scattered hepatic cysts. No biliary ductal dilatation.

SPLEEN: No splenomegaly.

PANCREAS: No focal masses or ductal dilatation.

ADRENALS: No adrenal nodules.

KIDNEYS/URETERS: No hydronephrosis, stones, or solid mass lesions.

PELVIC ORGANS/BLADDER: Unremarkable.

PERITONEUM / RETROPERITONEUM: No free air or fluid.

ABDOMINAL LYMPH NODES: Bilateral external iliac nodes the largest on the left measuring 1.7 cm. Subcentimeter periportal lymph nodes..

VESSELS: Unremarkable.

GI TRACT: No distention or wall thickening.

BONES AND SOFT TISSUES: Lytic lesion and pathologic fracture of the left scapula with surrounding soft tissue swelling. Bilateral axillary lymph nodes the largest in the right axilla measuring 1.2 cm in short axis.

**IMPRESSION:**

Scattered nodules throughout the lungs with cystic lucencies, lytic lesion in the left scapula, and scattered lymphadenopathy. Constellation of findings are non-specific, but could be seen in eosinophilic granuloma, or other granulomatous disease such as sarcoid. Tuberculosis cannot be excluded in the correct clinical setting, however, is less likely. Infectious etiology such as septic emboli would also be possible.

**Impression:**

This is most interesting 48 yo male with hx of left sided clavicular pain as well as a more indolent history of fatigue with some element of URI like symptoms and a chest CT revealing multiple small nodules and cysts. Thus far workup from the bone biopsy has been negative from an infectious standpoint revealing dense neutrophilic infiltrate and granulomas but no organism. The duration of the nodules on CT is hard to characterize as at present we do not have old imaging. The patient notes that he did have a CT scan at [REDACTED] about 5 years ago and it would be helpful to obtain that imaging from a comparison standpoint. The differential for these nodules and cysts is broad and includes inflammatory, infectious and malignancy. In particular inflammatory etiologies need to be further considered specifically with his history of smoking: eosinophilic granuloma (Langhans Histiocytosis). Pulmonary LCH is slightly more prevalent in males and clearly is more frequent in smokers than in non-smokers (Respiration 1993;60(1):38-44.). In addition PLCH is often diagnosed as an incidental finding on imaging in the absence of symptoms and can be characterized by both nodules and cysts. LCH can involve the bone in adults favoring jaw (30 percent), skull (21 percent), vertebrae (13 percent), pelvis (13 percent), extremities (17 percent), and ribs (6 percent) ( Med Pediatr Oncol 1997 Jan;28(1):9-14.). Also, patients frequently have normal spirometry and lung volumes as in this case but can have a disproportionately low DLCO (Eur Respir J 1996 Oct;9(10):2002-6.) Notably this patients DLCO is mildly impaired. Notably if this is EG then smoking cessation is critical. Additional considerations from an inflammatory standpoint would include sarcoidosis however he has fairly unimpressive mediastinal involvement and I would have expected PFT abnormalities to be present. Also, although bone can be involved in sarcoid (in about 5% of cases) when it does occur it is usually in the setting of infiltrative skin lesions and tends to most frequently involve the bones Sarcoidosis 1992 Sep;9(2):130-3. I also would have expected the biopsy to have been more informative if this were the case. This could be an atypical presentation of malignancy and again I would have expected results from the biopsy to be confirmative. It is also possible that the bone and pulmonary involvement are unrelated. The patient likely needs sampling of the pulmonary lesions. I think a more definitive diagnosis would be obtained via VATs and would recommend consultation with thoracic surgery (first would obtain old imaging to compare). Transbronchial biopsy is an alternative approach and could be useful especially in cases of suspected sarcoid however I would favor VATs in this case. Intra-operative BAL could also be performed.

**Recommendations:**

- obtain old CT scan from [REDACTED] (about 5 years go)

- Thank you for this interesting consult. Case to be discussed with Dr. [REDACTED] Visit  
Att)

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